

REMARKS

Favorable reconsideration of this application is respectfully requested.

Claims 1-20 are pending in this application. The present Amendment amends Claims 1, 2, 11, and 12. Amended Claims 1, 2, 11, and 12 are supported by page 21, lines 20-25 of the specification. No new matter has been added.

Claims 1-2, 5-8, 11-12 and 15-18 were rejected under 35 U.S.C. §103(a) as unpatentable over Orito (U.S. Patent No. 6,072,912) in view of Yamamoto et al. (U.S. Patent No. 4,841,376, hereinafter “Yamamoto”) and Arimoto et al. (U.S. Patent No. 5,371,613, hereinafter “Arimoto”). Claims 3-4 and 13-14 were rejected under 35 U.S.C. §103(a) as unpatentable over Orito in view of Yamamoto, Arimoto and Barron et al. (U.S. Patent No. 5,659,355, hereinafter “Barron”). Claims 9-10 and 19-20 were rejected under 35 U.S.C. §103(a) as unpatentable over Orito in view of Yamamoto, Arimoto and Shigeeda et al. (U.S. Patent No. 5,900,948, hereinafter “Shigeeda”).

The outstanding rejections are respectfully traversed.

Amended independent Claims 1, 2, 11, and 12 recite a image reading device including, *inter alia*, “an empty transfer part, ***the empty transfer part outputting an empty transfer level corresponding to black dummy pixels which are always shaded.***”

By way of background, an empty transfer part may include black dummy pixels which are always shaded. The black dummy pixels are not used for reading an image. The empty transfer part corresponds to, for example, the top sensor 12, shown in Figure 2 of the present specification. The empty transfer level voltage V_{t1} , is an analog output of the empty transfer part.¹

Orito describes an image sensor 54 made up of 1,648 CCDs (charge coupled devices). When a white plate 51 is irradiated with light, the image sensor 54 will produce one line's

¹ See page 21, lines 20-25 of the specification.

worth of white level data consisting of 1,648 pieces of white level or white tone data. When the white plate 51 is irradiated with no light, the image sensor 54 will produce one line's worth of black level data consisting of 1,648 pieces of black level or black tone data. When the original document 41 is irradiated with light, the image sensor 54 will produce one line's worth of tone data consisting of 1,648 pieces of tone data representing degrees of lightness and darkness between and including black and white. Each tone data represents a tone of a corresponding one of 1,648 picture elements aligned on the original document 41 in the main scanning direction.²

However, Orito does not teach or suggest an empty transfer part outputting an empty transfer level corresponding to *black dummy pixels which are always shaded*. In Orito, only when the white plane is irradiated with no light, will the image sensor 54 produce one line's worth of black level data consisting of 1,648 pieces of black level or black tone data. Further, Applicants' dummy pixels *are not* used for reading an image, while the image sensor 54 of Orito *is* used for reading an image. Accordingly, Orito does not teach or suggest "an empty transfer part" as defined in independent Claims 1, 2, 11, and 12.

Yamamoto describes varying a reference voltage of an A-D converter to correct input image data; and subtracting reference data through the A-D converter.³ Thus, it is respectfully submitted that Yamamoto does not cure any of the above-noted deficiencies of Orito.

Arimoto describes correcting reference data (Wave') by a ratio⁴ between a first digital level (Pave) obtained when the reference data is detected and a second digital level (Wave) obtained when the image is read.⁵ Thus, it is respectfully submitted that Arimoto also does not cure any of the above-noted deficiencies of Orito.

² See Orito at column 5, lines 51-65.

³ See Yamamoto at column 4, lines 16-40.

⁴ See Arimoto at column 9 lines 21-25.

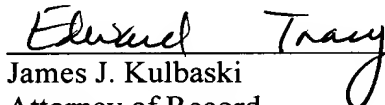
⁵ See Arimoto at column 7 lines 4-12.

As none of the cited references, individually or in combination, disclose or suggest "an empty transfer part" as defined in independent Claims 1, 2, 11, and 12, Applicants submit the inventions defined by Claims 1, 2, 11, and 12, and all claims depending therefrom, are patentable over the asserted references for at least the reasons stated above.⁶

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1-20 is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



James J. Kulbaski
Attorney of Record
Registration No. 34,648

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)

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Edward W. Tracy
Registration No. 47,998

⁶ MPEP § 2142 "...the prior art reference (or references when combined) must teach or suggest **all** the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)."